REMARKS

Claims 1-12, as amended, are active in the present application. None of the claims have been amended by this response.

In the Office Action mailed August 26, 2003, claims 1-11 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 4,334,221 (referred to as "Rosen") in view of U.S. Patent No. 6,151,381 (referred to "Wood"). It is a position of the Examiner that Rosen discloses a wireless remote control system for a toy vehicle using a Manchester packet-encoding scheme which includes biphase encoded bits having a 50% duty cycle where one binary state is defined by two transmit elements of a bit being the same and another binary state is defined by two transmit elements of a bit being opposite. The Examiner further states that the packets in the Rosen patent are uniformly encoded as having a first predetermined number of flag bits, a second predetermined number of data bits having varying values depending on selected steering and speed, and at least one checksum bit. The Examiner agrees with the Applicants that Rosen does not teach an uninterrupted stream of control packets as called for in claim 1.

The Examiner further takes the position that the Wood patent teaches a certain packet structure delivery system using a continuous stream of packets to increase the speed of data delivery. The Examiner states that one "would be motivated to modify Rosen to use an uninterrupted stream of packets for speedy data delivery which would allow for lower data latency and full utilization of system bandwidth". The Examiner therefore concludes that it would have been obvious to one of ordinary skill in the art at the time the invention was made to "modify Rosen with an uninterrupted packet stream taught by Wood to reduce latency and increase efficiency". The Examiner further recites arguments regarding the inherency of the subject matter of claims 2-11. For the reasons as set forth below, the Applicants respectfully traverse the rejection of claims 1-11.

The Rosen patent discloses a radio controlled system for a multi-controller, multi-vehicle, independently controlled toy vehicle system. In the Rosen system, each of a plurality of control devices or control units is used for controlling a single one of a plurality of toy vehicles (for example four vehicles), using the same frequency. In order to permit multiple separate controllers to control multiple separate toy vehicles utilizing a single frequency, each of the transmitters of the Rosen system repetitively transmit bursts of command signals which are received in each of the plurality of toy vehicles. As shown in Fig. 4, each of the command

signals includes a start pulse followed by a two bit identification code, six bits of steering data, five bits of speed data and a single parody bit. As observed by the Examiner, the digital bits are encoded in "Manchester Code" (see Fig. 5) where a logical zero consists of positive and negative alteration in either order and a logical one employs a single positive or negative alteration. As shown in Fig. 4, each command signal has a duration of approximately 2.5 milliseconds.

As shown in Figs. 2 and 3, the command signals are asynchronously transmitted as a series of repetitive radio frequency command bursts with each burst having a burst time (approximately 2.5 milliseconds) with each command burst being separated by quiescent periods at least ten times as long as the burst time. In the example given in the patent specification when a command burst occupies about 2.5 milliseconds, the quiescent time between bursts occupies 97.5 milliseconds. In this manner, there is only a 2.5 percent chance of the burst period from one of the transmitters coinciding with the burst period from one of the other transmitters. If command bursts from two transmitters occur at the same time, both command bursts are rejected by all of the toy vehicle receivers.

The present invention comprises a communication system for transmitting control signals from a remote control unit to a toy vehicle based upon the position of control inputs of the remote control unit. The remote control unit includes an encoder and a transmitter and the toy vehicle includes a receiver, decoder and actuators for controlling the operation of the toy vehicle in accordance with control signals received from the remote control unit. Unlike the Rosen patent, with the present invention the encoder within the remote control unit generates a continuous stream of control signal packets with each packet including a first predetermined number of flag bits, the states of which are always the same, a second predetermined number of data bits, the states of which vary depending upon the positions of the control inputs and at least one checksum bit. The stream of control signal packets are continuously transmitted by the transmitter within the remote control unit at a constant frequency. Each transmitter uses a separate frequency so there is no concern about command signals colliding. This a significant difference over the Rosen patent in which the command signals are periodically generated and periodically transmitted as individual command bursts using the same frequency with long quiescent periods therebetween.

The newly cited Wood patent discloses a system for encapsulating asynchronous transfer mode packets for transmission in a satellite communication system. As correctly observed by

the Examiner, the Wood patent appears to teach or suggest the desirability of transmitting continuous uninterrupted streams of data packets, a feature which is particularly desirable when using asynchronous communication techniques.

In the Office Action, the Examiner states: "One would be motivated to modify Rosen to use an uninterrupted stream of data packets for speedy data delivery which would allow for lower data latency and full utilization of system band width" referring to a statement which appears at column 3, lines 7-29 of the Wood patent. Based upon this statement alone, the Examiner concludes that it would have been obvious to modify Rosen with an uninterrupted packet stream.

The Applicants wish to point out to the Examiner that the basic communication scheme of the Rosen patent requires that the transmitters transmit only short (2.5 milliseconds) bursts of command signals which are separated by long quiescent periods (97.5 milliseconds). The purpose of maintaining short command bursts followed by long quiescent periods is to minimize the chance of transmissions from two or more of the multiple transmitters transmitting at the same frequency from colliding with each other. In this manner, the Rosen communication scheme permits a plurality (4 in the disclosed embodiment) of separate transmitters to control a plurality (4 in the disclosed embodiment) of separate vehicles using the same frequency. The Examiner suggests that Rosen be modified to use uninterrupted streams of data packets. The Applicants respectfully suggest that the use of an uninterrupted stream of data packets in the Rosen communication scheme would make the communication scheme completely inoperable because it would permit only a signal transmitter to continuously transmit for controlling a single vehicle. As noted above, the whole purpose of the Rosen communication scheme is to use short command bursts to permit multiple transmitters to control multiple vehicles utilizing the same frequency. Obviously, if one transmitter were to transmit essentially an uninterrupted stream of packets, any attempt by any of the other transmitters to transmit their own data packets at the same frequency would result in continuous collisions thereby precluding any effective control of the toy vehicles. As stated in the Rosen patent, in the event of a collision of the signal packets, the commands are ignored. While in synchronous communication system, it may well be desirable to fully utilize system bandwidth, in the asynchronous communication system of the Rosen patent, full utilization is contrary to the entire communication scheme and would result in an inoperable system. Accordingly, while the Examiner has pointed to a teaching in the Wood

patent with respect to the desirability of transmitting uninterrupted packet streams, that teaching is contrary to the Rosen patent. In fact, the Rosen patent clearly teaches away from the desirability of using an uninterrupted packet stream since to do so would render the Rosen communication system inoperable with respect to more than a single toy vehicle. For the foregoing reasons, it is respectfully requested that the rejection of claims 1-11 under 35 U.S.C. § 103 based upon a combination of the Rosen patent and the Wood patent should be withdrawn.

Claim 12 was rejected under 35 U.S.C. § 103(a) as being unpatentable over the Rosen patent in view of the Wood patent as applied with respect to claims 1-11 and further in view of the art of electronics (referred to as the "AE") article. For the reasons as set forth above with respect to claims 1-11, the Applicants respectfully submit that the Examiner has made an improper combination of the Rosen patent and the Wood patent. Accordingly, and for the reasons as set forth above with respect to claims 1-11, the Applicants respectfully request that the rejection of claim 12 be withdrawn.

In view of the foregoing arguments, it is respectfully submitted that the present application including claims 1-12, as amended, is in condition for allowance and such action is respectfully solicited.

Respectfully submitted,

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(Date)

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Enclosure